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The Files

8 May 1957

[redacted] 50X1

Model X VLF Ground Communication System, Operational Test

1. An operational test of the VLF Ground Communications System designed and developed by [redacted] 50X1 was performed near the R&D Laboratory by the External Projects Section. Functional and technical support was provided by the R&D Laboratory.

2. The following observations and comments on the system are noted:

a. Satisfactory communication was established over a distance of eight-tenths mile.

b. Good reception of the two-way transmission was obtained on a VLF receiver using a space antenna approximately fifty feet above ground. This receiver was positioned about 300 feet from the end of one of the VLF antennas and about eight-tenths mile from the other. Therefore, it is concluded that no security from space monitors is provided by the VLF Ground Communications System.

c. Reception on the Ground System receivers was unusually noise free for a 30 kc carrier.

d. The equipment is bulky and heavy, and the installation requires accessories and tools not normally carried by field personnel.

e. Installation of each dipole type ground antenna requires about three man-hours.

f. Certain sections of the battery pack supply a much heavier drain than other sections; as a result, the capacity of those sections is inadequate for satisfactory operation of the equipment. When the pack is recharged the low drain section is overcharged before the heavy drain section can be fully recharged.

g. The type 2B receiver is much more sensitive than the type 1B receiver. However, alignment of the 2B is critical and with slight

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g. continued:

misalignment it breaks into oscillation.

3. The VLF General Communication System does not meet the primary requirement of a secure communications system. It could be used only in isolated areas where danger of detection by monitors would be reduced. Even here, the same result could be accomplished with a VHF system, at limited power, and with less weight and installation problems.

50X1

Lab/HK/bao (8May 57)
Distribution:
Original - Lab
1 - R&D/EP ←
1 - R&D Chrono
1 - Dev/s

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